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TSSG/DED-1713-69
9 July 1969

MEMORANDUM FOR: Chief, Development and Engineering Division, TSSG

SUBJECT: Stereo Observation of Projected Views with the Unaided Eyes

1. Stereo observation of projected views utilizing various aids (e.g., special eyeglasses, etc.) for selective reception of the left and right views of a stereo pair by the left and right eyes respectively of an individual has been an accomplished fact for years (e.g., anaglyphs, etc.).

2. It is noted that stereo observation of projected views with the unaided eyes is a sought after capability (e.g., 3D television, 3D movies and, of primary interest to us, 3D rear projection).

3. Ordinary movie projection depends on a phenomenon known as "persistence-of-vision". Simply described, this consists of sequential projection of individual views of an object, with the object in any single view being slightly displaced from that in the previous view. When viewed in sequence at an ideal rate, an illusion of motion is perceived by the observer.

4. I am of the opinion that the "persistence-of-vision" phenomenon can be adapted to viewing a stereo pair in such a way that an illusion of depth will be formed in the observers mind similar to the way in which the illusion of motion is formed when viewing movies. In its simplest form, this would involve alternate observation of each of a stereo pair, with both eyes, the alternate views being projected at some ideal rate. An extention of this simplest form would involve alternate observation of multiples of each of a stereo pair, with both eyes, the alternate multiple views being projected at some ideal rate.

5. Basic research, utilizing standard movie equipment could be used to prove or disprove the feasibility of this concept.

6. Since the concept is so simple, it is possible that it may have been investigated previously. This, of course, could be established by a literature search.

25X1

7. I recommend that [redacted] be asked to perform a search of the bibliography which they have compiled for us to determine if this concept has been previously advanced and investigated. In addition, I further recommend that our library be asked to have a patent search conducted.

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8. If these two searches prove negative, I recommend that a basic research project be initiated, in-house, to prove or disprove the feasibility of this concept.

9. For information, I have discussed this idea with [redacted] and my recommendations are, in part, based on his comments. 25X1

10. In the likely event that this concept may prove feasible, I have taken the liberty of having this memorandum witnessed, in order to protect the patent rights of the Government as well as myself.

[redacted] 25X1

I have read and fully understand the contents of this memorandum.

Witnessed _____ Date _____

25X1 [redacted]

Time _____

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